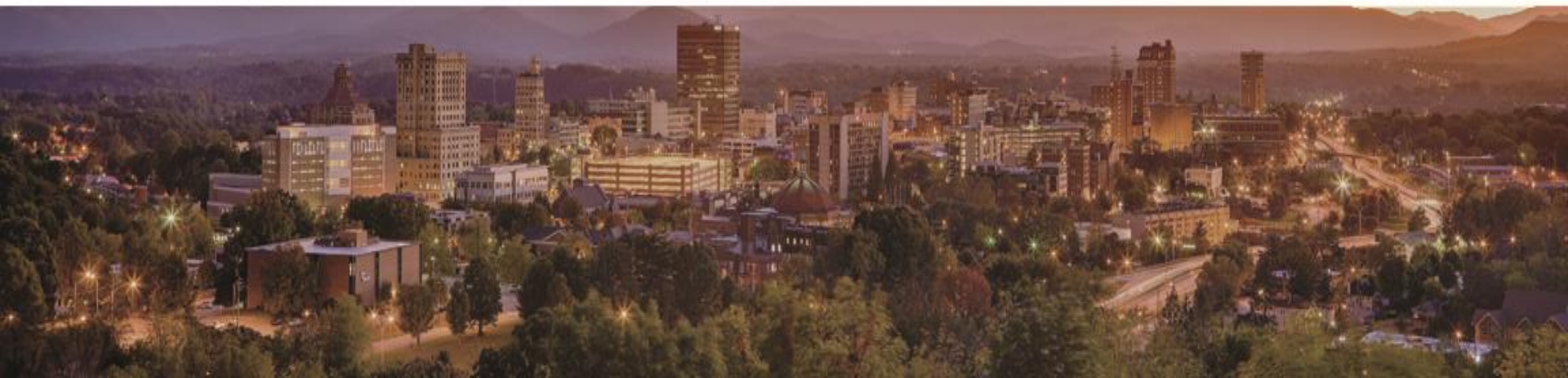




*NCDOT - Division of Aviation  
UAS Program Office*

Basil Yap



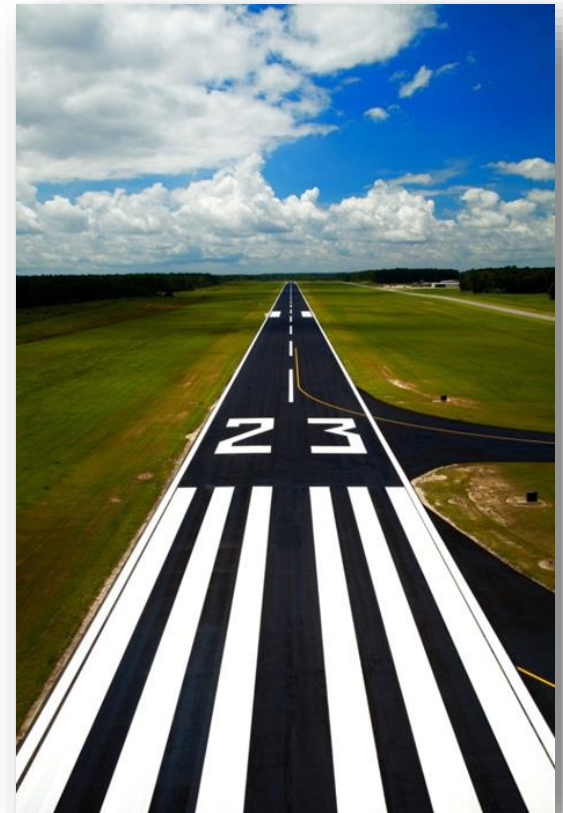
# *Aviation in North Carolina*

Annually:

- 29.1 million total passenger enplanements
- 3.2 million total aircraft operations
- Over 1.4 billion pounds of air cargo

Pilots and Aircraft:

- 17,760 Pilots
- 6,987 Manned Aircraft
- **13,264 UAVs**



# *NCDOT Division of Aviation Mission*

Promote the economic well being of North Carolina through air transportation system development and improved aviation safety and education.



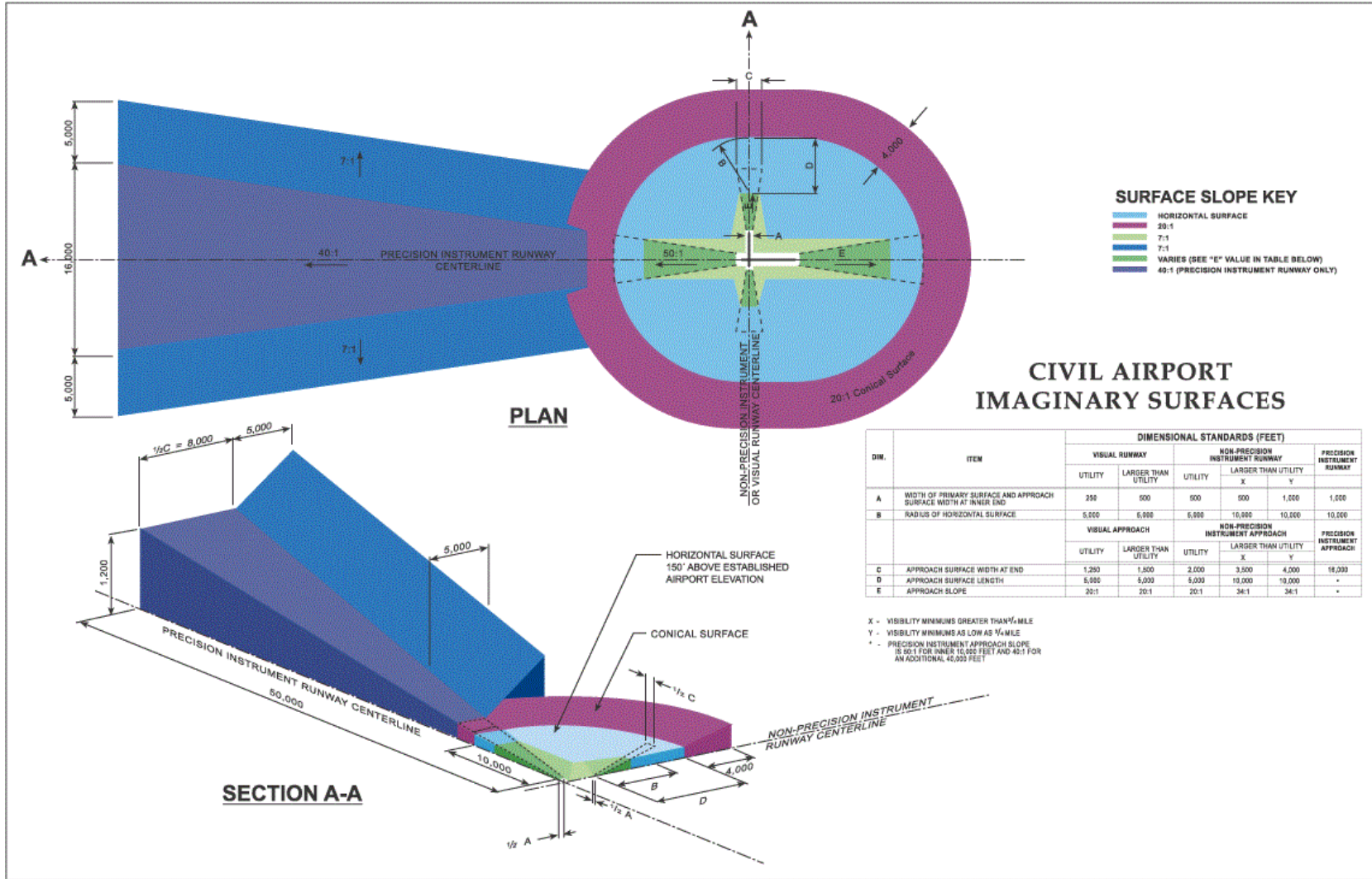
# *Division of Aviation Core Functions*

Provide:

- Aviation Safety and Education Programs
- State and Federal Airport Grant Programs
- Air transportation, operations, and support for state agencies
- Management of the state's Unmanned Aircraft System Program



# Part 77 – Protect your Airports



# *NCDOT Aviation UAS Program Office*



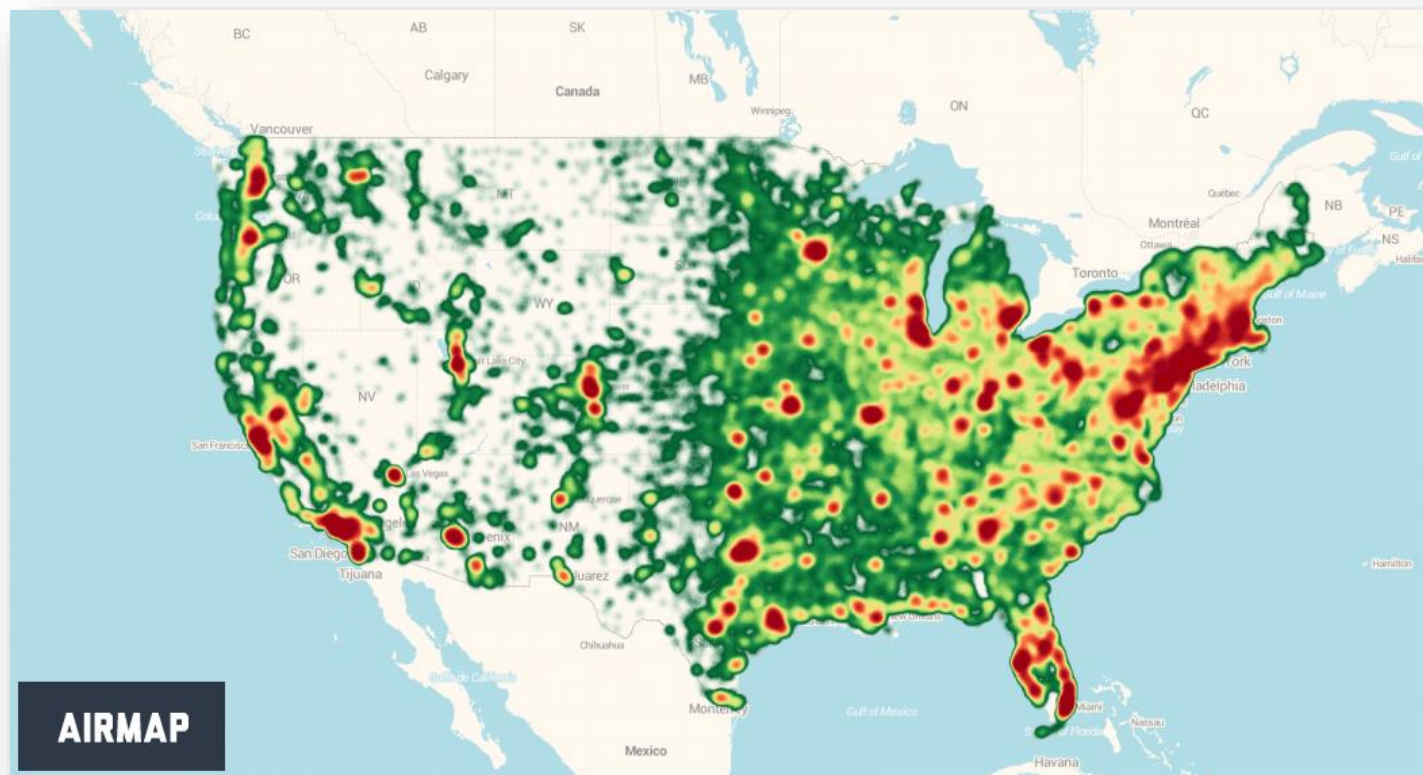


# *Hobbyist Drone Registrations*

As of May 2016, FAA records show:

- 459,374 hobbyist drones registered in the United States
- 13,017 hobbyist drones registered in North Carolina

Source [FAA](#)



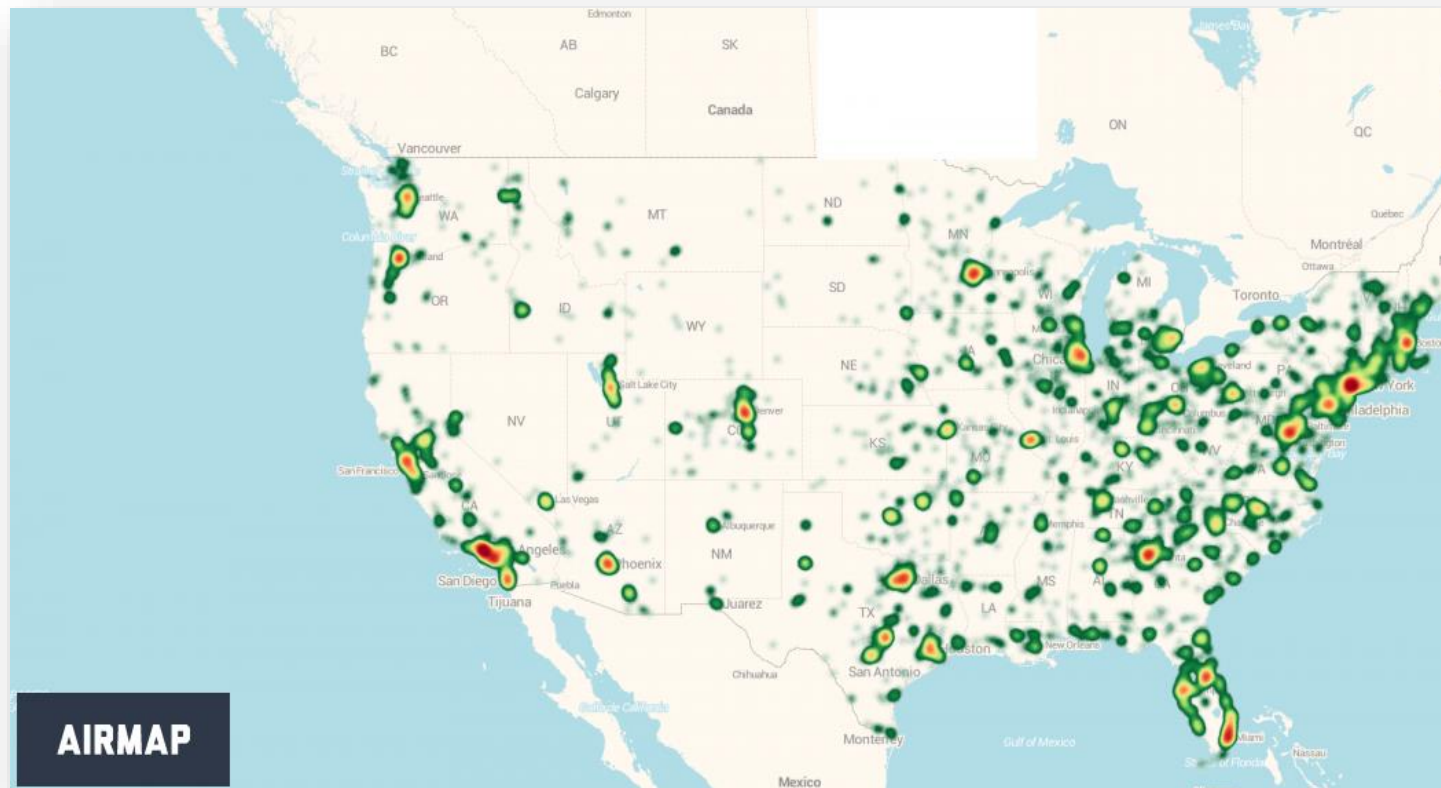


# *Non-Hobbyist Drone Registrations*

As of May 2016, FAA records show:

- 8,357 non-hobbyist drones registered in the United States
- 247 non-hobbyist drones registered in North Carolina

Source [FAA](#)





# FAA sUAS Forecasts

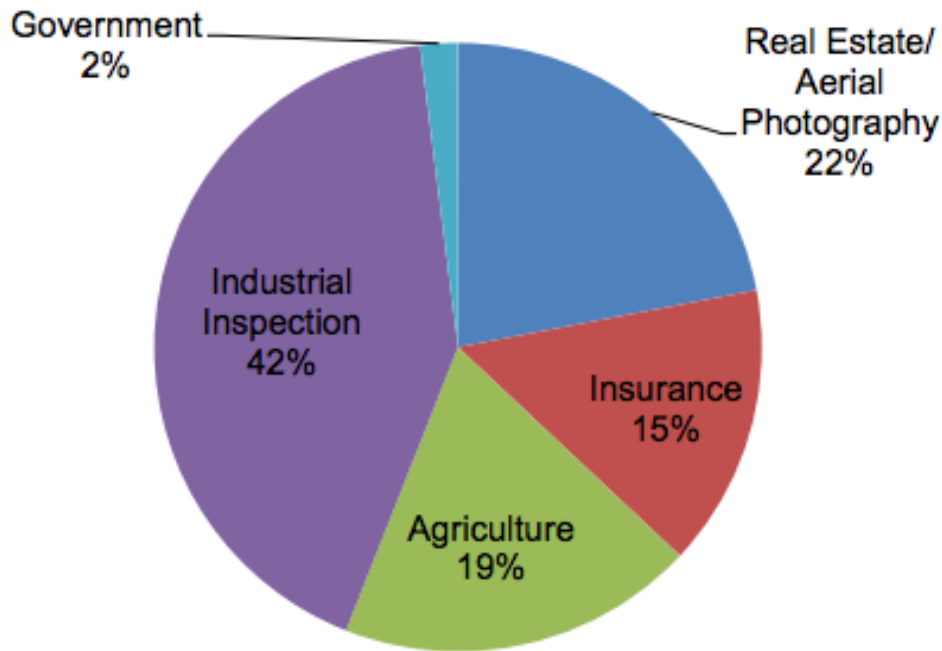


- FAA estimates for small, hobbyist UAS purchases may grow from 1.9 million in 2016 to as many as 4.3 million by 2020.
- Sales of UAS for commercial purposes are expected to grow from 600,000 in 2016 to 2.7 million by 2020.
- Combined total hobbyist and commercial UAS sales are expected to rise from 2.5 million in 2016 to 7 million in 2020.

# FAA sUAS Forecasts



**Top Five sUAS Markets**



- The FAA recognizes that the full potential of commercial UAS operations are restrained by the existing regulatory framework
- “The overall demand for commercial UAS will soar once regulations more easily enable beyond visual line of sight (BVLOS) operations and operations of multiple UA by a single pilot.”

# *Interactions with Manned Aircraft*



Between August 2015 and January 2016:

- 12 registered UAS sightings in North Carolina
- 583 registered UAS sightings in the United States

Source: [http://www.faa.gov/uas/resources/uas\\_sightings\\_report/](http://www.faa.gov/uas/resources/uas_sightings_report/)



Photo Source: Flickr



# Construction Project Monitoring



**NC STATE UNIVERSITY**

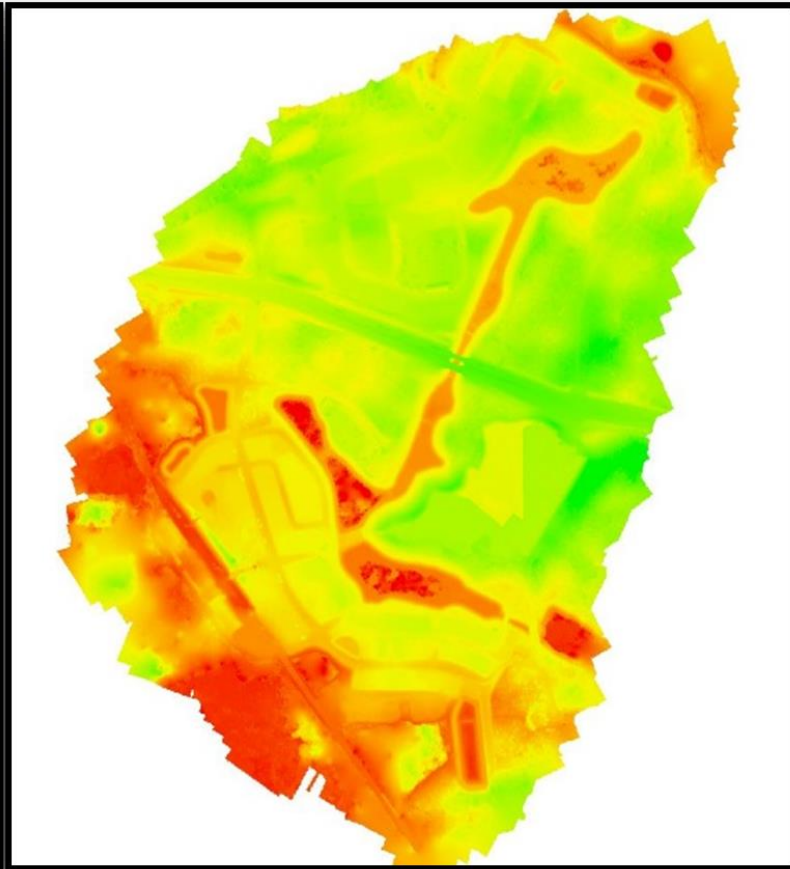


**NGAT**



*Transportation*

# Construction Project Monitoring



**NC STATE UNIVERSITY**



**NGAT**



*Transportation*

# FEDERAL

Airspace is sole sovereignty of federal government



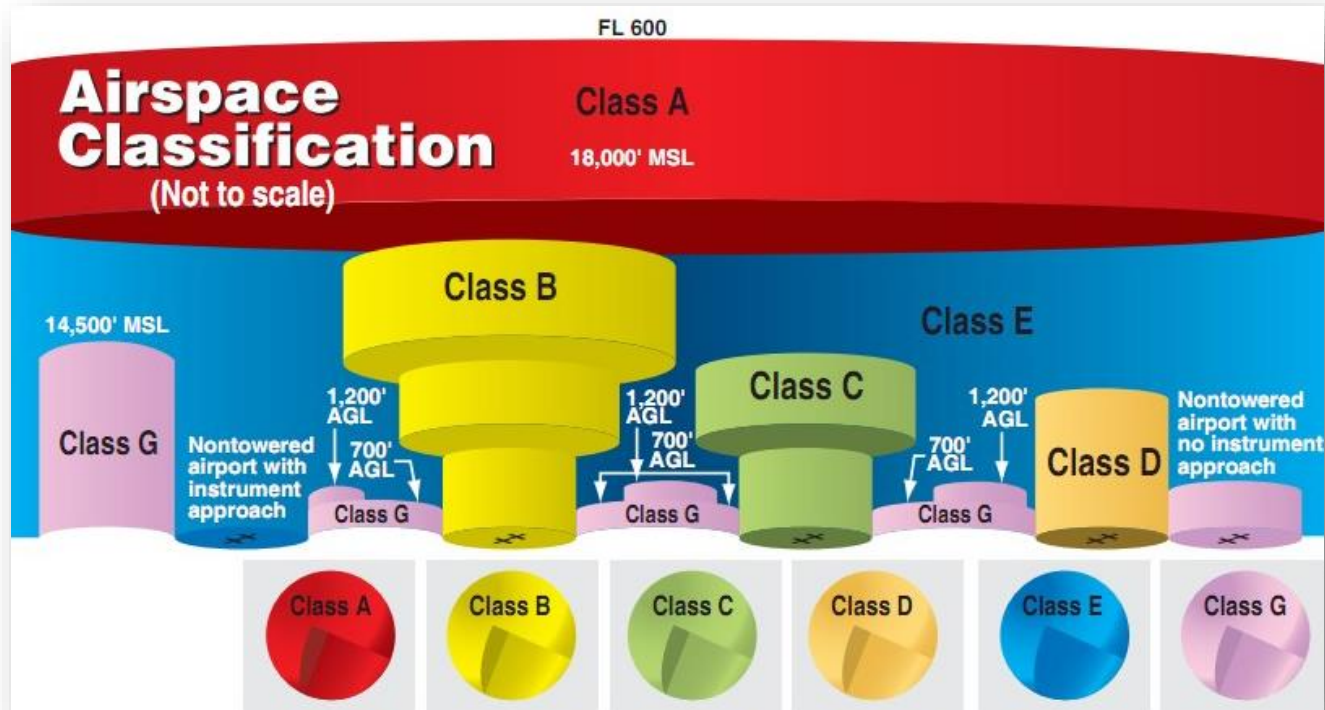
# NORTH CAROLINA

NC General Statutes



**DIVISION OF AVIATION**  
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

# FAA's Role - Regulate the Airspace



49 U.S.C. United States Code -Title 49 –§40103. ....

(1) The United States Government has exclusive sovereignty of airspace of the United States.





# *New FAA small UAS rule*

- *FAR Part 107 “Small UAS Rule”, Effective: August 29, 2016*
- Major Provisions:
  - Small UAS is between .55lbs and 55lbs
  - Operators must have a Remote Pilot’s Certificate from the FAA or else operate the drone under the supervision of someone who has obtained the certificate.
    - Certificates valid for 2 years
    - Minimum age: 16
  - Operators may fly both during the day and in civil twilight;
  - Max altitude 400ft AGL, Max Speed 100 mph;
  - Operators cannot fly a drone over anyone not involved with the operation;
  - Operators must keep a drone within their line of sight while it is flying.
  - *Waivers and Airspace authorizations can be requested through FAA*

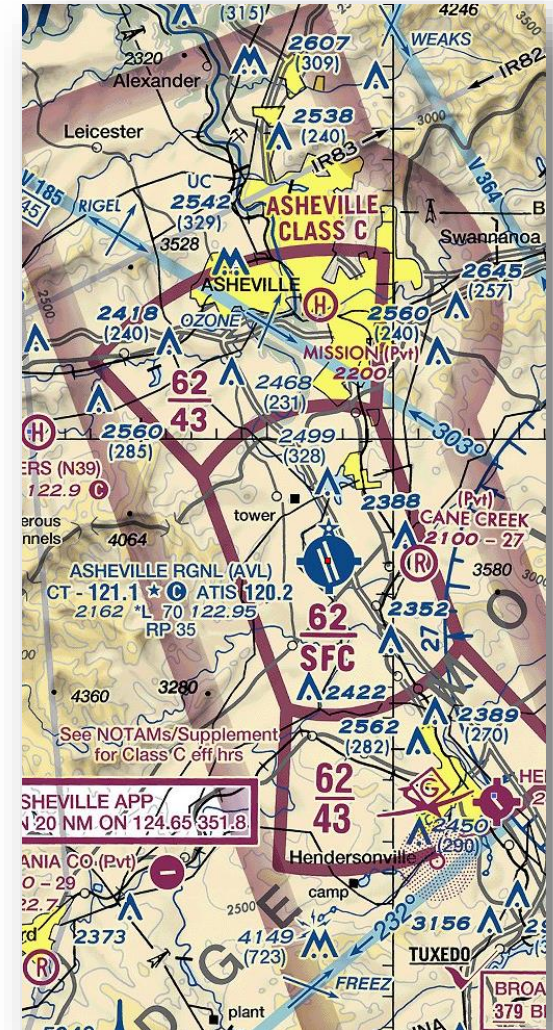




# Legally operating a UAS



- COAs and Section 333 Exemptions not going away – still are available as a means for authorizing operations not covered under Part 107 – e.g. UAS over 55 lbs or high altitude operations.
- FAR Part 107 Remote Pilot Certificate
  - New pilots must pass a FAA Aeronautical Knowledge Test administered by FAA-approved Flight Testing Centers and pass TSA background check.
  - Or existing aircraft pilots can obtain Remote Pilot Certificate by completing an online course at <https://www.faa.gov>, have a current flight review, and apply for the rating with FAA.



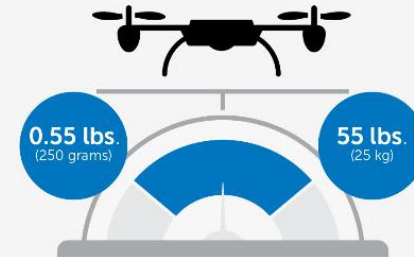
# Register your Drone



- Hobbyist and non-hobbyist drones need to be registered with the FAA
- <https://registermyuas.faa.gov>

## Do I need to register my Unmanned Aircraft?

You need to register your aircraft if it weighs between 0.55 lbs. (250 grams) and up to 55 lbs. (25 kg)



You will be subject to civil and criminal penalties if you meet the criteria to register an unmanned aircraft and do not register.

REGISTER



## Summary of NC S.L. 2014-100 regarding UAS

### Updated by passage of NC S.L. 2015-232

*Changes or additions to the following:*

- Chapter 14 – Criminal Law
  - §14-7.45 Crimes committed by use of UAS
  - §14.280.3 Interference with manned aircraft by UAS
  - §14.401.24 Unlawful possession and use of UAS (Weapon attached)
  - §14.401.25 Unlawful distribution of images
- Chapter 15A – Criminal Procedure
  - §15A-300.1 Restrictions on use of UAS
  - §15A-300.2 Regulation of launch and recovery sites




## Summary of NC S.L. 2014-100 regarding UAS

### Updated by passage of NC S.L. 2015-232

*Changes or additions to the following:*

- **Chapter 63 – Aeronautics**
  - **§63-95 Training required for operations of UAS (Knowledge Testing)**
  - **§63-96 Permit required for commercial operation of UAS**
- Chapter 113 – Conservation and Development
  - §113-295 Unlawful harassment of persons taking wildlife resources









**Unmanned Aircraft Systems in  
NORTH CAROLINA**




**NORTH CAROLINA  
GENERAL STATUTES**

**Session Law 2014-100**  
Updated in Session Law 2015-232

While this is a summary of Session Law 2014-100 & 2015-232 relating to UAS operations, other General Statutes apply to UAS operations within North Carolina.

-  **Surveillance:** It is illegal to use UAS to take or distribute images of a person or their home without their consent. (NC GS § 15A-300.1 and NC GS § 14-401.25)
-  **Special Imaging:** Special imaging technology can only be used for specific missions, including but not limited to scientific research, surveying, and agricultural uses. (NC GS § 15A-300.1 and NC GS § 14-401.25)
-  **Weapons:** Attaching a weapon to a UAS is a class E felony. (NC GS § 14-401.24)
-  **Hunting and Fishing:** You may not use a UAS to disrupt wildlife resources or the lawful taking of wildlife. It is also against the law in NC to use a UAS in the process of taking wildlife resources. (NC GS § 14-280.3)
-  **Interference with Manned Flights:** You may not damage, disrupt the operation of, or otherwise interfere with manned flights. (NC GS § 14-280.3)
-  **Launch/Recovery Sites:** It is illegal to launch or recover your UAS from either private or public property without explicit consent of the property's owner. (NC GS § 15A-300.2)
-  **Knowledge Test:** To fly in North Carolina, you must pass the NCDOT's UAS Knowledge Test to ensure your safety and the safety of those around you. (NC GS § 63-95)
-  **Permit:** With the passing of the Knowledge Test as a prerequisite, commercial operators may request an NC UAS permit from the NCDOT Aviation Division. (NC GS § 63-96)

For more information, visit [www.ncdot.gov/aviation/UAS](http://www.ncdot.gov/aviation/UAS)



**DIVISION OF AVIATION**  
North Carolina's Authority on Transportation

# NC UAS Website

- Online administration of NC UAS Operators Knowledge Test
- Commercial and Government UAS Operator's Permits can be acquired online
- UAS Safety Guide and NC Statutes
- Helpful Links

[ncdot.gov/aviation/uas/](http://ncdot.gov/aviation/uas/)

The screenshot displays the 'UAS Operator Permitting' website. The header includes the logo and navigation links for Business, DMV, Newsroom, Programs, Projects, and Travel & Maps. The main content area is titled 'Start Knowledge Test' and features a large image of a drone and a person. A call-to-action box asks, 'Do you know the requirements to fly a drone in North Carolina?' and provides two buttons: 'Download Study Guide' and 'Start Knowledge Test'. Below this, a section titled 'BEFORE YOU BEGIN Requirements for Operator Permitting in North Carolina' is divided into three columns: Commercial, Government Operations, and Recreational. Each column lists specific requirements with green checkmarks and includes a 'More Information' button at the bottom.

Commercial	Government Operations	Recreational
<ul style="list-style-type: none"><li>✓ Obtain a <a href="#">Section 333 Exemption</a> from the Federal Aviation Administration (FAA).</li><li>✓ Alternatively, a <a href="#">Special Airworthiness Certificate</a> can be obtained from the FAA.</li><li>✓ Operator must pass the NCDOT UAS Knowledge Test.</li><li>✓ Operator must have a valid Driver License.</li><li>✓ Operator must have a valid <a href="#">Airman Certificate</a> or a sponsor with valid Airman Certificate.</li></ul>	<ul style="list-style-type: none"><li>✓ Obtain a <a href="#">Certificate of Authorization</a> from the Federal Aviation Administration (FAA).</li><li>✓ Operator must pass the NCDOT UAS Knowledge Test.</li><li>✓ Operator must have a valid Driver License.</li></ul>	<ul style="list-style-type: none"><li>✓ Recreational UAS/drone operators are not required to obtain a permit from the Division of Aviation.</li><li>⚠ Recreational operators are required to register their UAS through the <a href="#">FAA's UAS Registration Service</a>.</li></ul>
<a href="#">More Information</a>	<a href="#">More Information</a>	<a href="#">More Information</a>

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# NCDOT Aviation UAS Website – One Stop Shop

**NCDOT** NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
Connecting people, products, and places safely and efficiently with customer focus, accountability and environmental sensitivity to enhance the economy and vitality of North Carolina.

Home | About | eNewsletter | Careers | Contact | Searching for... | Go | NCDOT Mobile

Business | DMV | Newsroom | Programs | Projects | Travel & Maps

Home » Division of Aviation » Operating Unmanned Aircraft Systems (UAS) in North Carolina

## Operating Unmanned Aircraft Systems (UAS) in North Carolina

**Do you know the requirements to fly a drone in North Carolina?**

Flying safely is the responsibility of every UAS operator. Download the Study Guide and learn all the rules & regulations in North Carolina.

[Download Study Guide](#)

[Start Knowledge Test](#)

### UAS Operator Permits

A permit is required for [commercial](#) & [government](#) drone operations in North Carolina. Passing the [UAS Knowledge Test](#) is a requirement for obtaining a permit.

[Start Permitting Process](#)

### About UAS Program

The Division of Aviation's main goal is to ensure that drones flying within North Carolina are flown safely and responsibly. [Read more...](#)

## Types of UAS Operation

Detailed information, guidelines and restrictions for drone pilots.

[Commercial](#) | [Government Operations](#) | [Recreational](#)

Take the Test

Get Permit

Learn

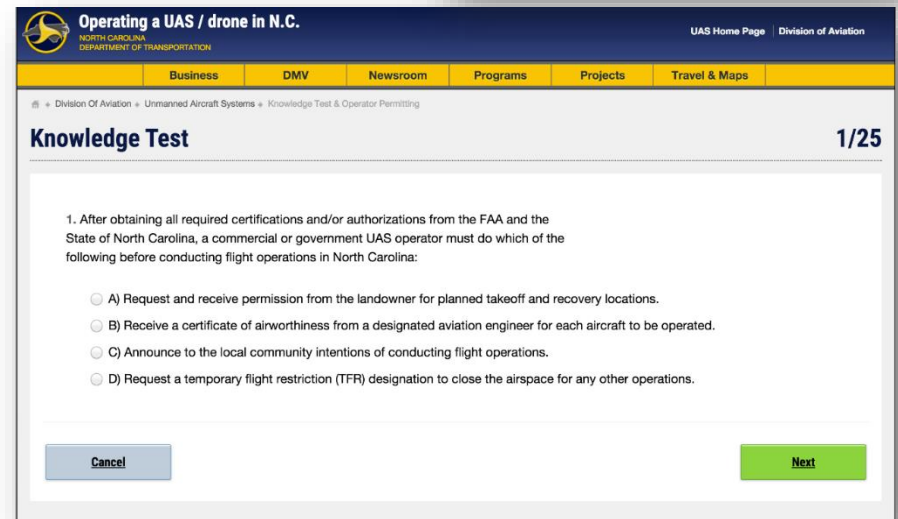
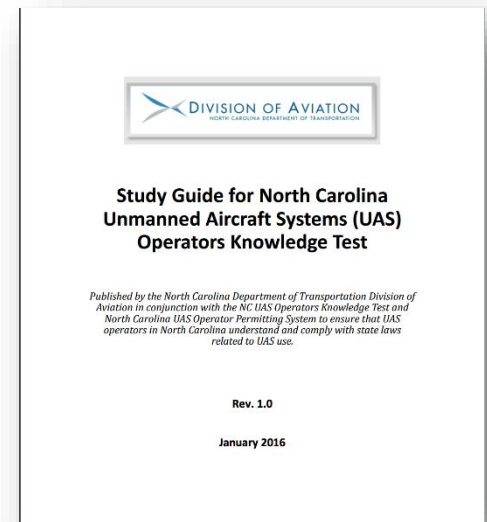
*Different types of UAS operations*

Help



*Access FAQs, Fact Sheets, NC Statues*

# NC UAS Operators Knowledge Test

- Required in addition to the FAA Remote Pilot Certificate test. The NC test focuses on NC specific laws.
- Ensures understanding of NC laws related to UAS Operations
- Download Study Guide, Take test and receive score immediately
- 25 questions, randomly selected from a 71 potential questions
- All UAS operators encouraged to take it
- Commercial and Government UAS Operators Required to Pass




# Operator Permits



Birthdate:  
Issued:  
Expires:  
**Permit No:**

UAS Commercial Operator Permit



DIVISION OF AVIATION  
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

Commercial and Government  
Operator Permits/Credentials  
Printed directly from website

*Ts&Cs on Reverse*

NC UAS Operator Permits valid for 2  
years from issuance  
Consistent with FAA-issued Part 107  
Remote Pilot Certificate



Birthdate:  
Issued:  
Expires:  
**Permit No:**

UAS Government Operator Permit



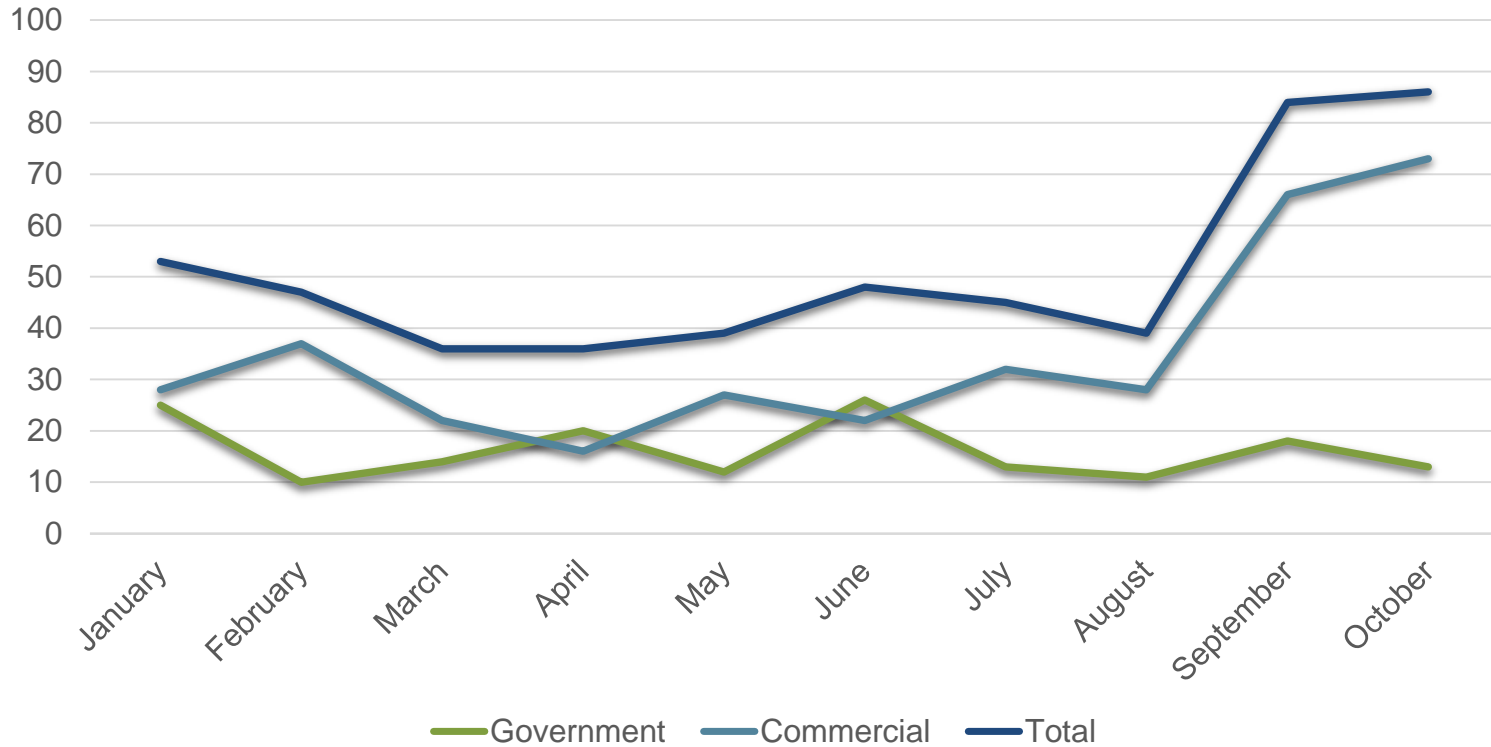
DIVISION OF AVIATION  
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

*Ts&Cs on Reverse*



# NC UAS Permits Issued

As of Nov. 1: 162 Government Permits, 351 Commercial Permits, 513 Total



# *Insurance - Commercial*

UAS Owner/Operator should have insurance coverage for their operations

- Not required by Federal or State law
  - Do not assume you are covered under blanket policy
  - Make sure insurance coverage has language that specifically states Unmanned Aircraft Systems, Unmanned Aircraft Vehicle, or similar
- ✓ This is a quick check when hiring a company to provide UAS services for you



# *Insurance - Government*

UAS Owner/Operator should have coverage

- Do not assume you are covered under blanket policy
  - Not required by Federal or State law
  - Make sure insurance coverage has language that specifically states Unmanned Aircraft Systems, Unmanned Aircraft Vehicle, or similar
- 
- State Agencies
    - Insurance coverage goes through NC Dept. of Insurance
    - Contact Lisa Weatherly - 1-888-275-8906 [lweatherly@lianc.com](mailto:lweatherly@lianc.com)
  - NC League of Municipalities
    - Contact David Ludwig, Rick Management (interim until January 2017) 919-715-2900
  - NC Association of County Commissioners
    - Contact Michael Kelly, Risk Management Director – 919-719-1124



# *NC Government UAS Checklist*

- ✓ FAA Authorization – Must obtain:
  - Remote Pilot Certificate (under Part 107)
  - Or hold a COA or 333 exemption
- ✓ FAA UAS Registration
  - All UAS/Drones under 55lbs and above .55lbs
- ✓ NC Knowledge Test
  - Take and pass the test on the NCDOT Division of Aviation website
- ✓ NC Government Operators Permit
  - Once you have passed your NC UAS Knowledge Test, you may obtain a permit
  - No fee charged at this time
- ✓ Insurance
  - Not required by federal or state law
  - Best Practice to have



# *NC Commercial UAS Checklist*

- ✓ FAA Authorization – Must obtain:
  - Remote Pilot Certificate (under Part 107)
  - Or hold a COA or 333 exemption
- ✓ FAA UAS Registration
  - All UAS/Drones under 55lbs and above .55lbs
- ✓ NC Knowledge Test
  - Take and pass the test on the NCDOT Division of Aviation website
- ✓ NC Commercial Operators Permit
  - Once you have passed your NC UAS Knowledge Test, you may obtain a permit
  - Need to have an airman certificate to complete the process
  - No fee charged at this time
- ✓ Insurance
  - Not required by federal or state law
  - Best Practice



# Holiday Checklist – New Drone Owner

If the UAS/drone is for hobbyist use, you must:

- ✓ Register your UAS/drone with the FAA online
- ✓ Operate within the hobbyist rules

Recommended:

- ✓ Take the NC UAS Knowledge Test



**Unmanned Aircraft Systems in NORTH CAROLINA**

**HOBBYIST GUIDELINES**

*Rules for flying hobbyist or recreational drones*

- ✓ Must fly below 400 feet
- ✓ Must fly within your line of sight
- ✓ Do not fly within 5 miles of an airports, above stadiums, or above other public events
- ✓ Do not fly for compensation
- ✓ Aircraft must weigh less than 55 lbs
- ✓ Do take lessons before flying

For more information, visit  
[www.ncdot.gov/aviation/uas](http://www.ncdot.gov/aviation/uas)  
[www.faa.gov/uas](http://www.faa.gov/uas)  
[www.knowbeforeyoufly.org](http://www.knowbeforeyoufly.org)

**DIVISION OF AVIATION**  
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION



# *Discussion*

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NCDOT – UAS Project Manager

UAS@ncdot.gov

[www.ncdot.gov/aviation/](http://www.ncdot.gov/aviation/)

